

WTCL-174-P

WPM-6441
Egress Analysis

MORGAN STANLEY et al

Quality Assurance Division Design Standards

TAA No.

Charge Code:

Tenant:

REVIEW STATUS

[illegible]



Memorandum

TO: Teresa Koebel, Manager, World Trade Project Management
FROM: C. John Lin
DATE: December 14, 1999
SUBJECT: WTC- ALTERATION APPLICATION WPM-6441 – MORGAN
STANLEY DEAN WITTER – 2 WTC – 43 RD FLLOR – EGRESS
ANALYSIS
REFERENCE: Review Request dated 12-7-99
COPY TO: A. Fadavi, J. Napolitano, J. Richardson, Chrono Folder, Job Folder

A review of the material listed below and submitted with the referenced request has been made.

It is recommended that **approval** to proceed with construction be granted.

There are no comments.

Drawing:

- REMARKS: 1) Drawing EA-1 is recommended for approval.
- 2) This memorandum was transmitted to the Facility via Outlook on December 14, 1999.

C. John Lin, P.E.
Manager
Quality Assurance Division

I.D.: WPM-6441-000
DR/lm
att.

Reviewer:
D.Remeta, Coordinator and Architectural.

**THE PORT AUTHORITY OF NEW YORK AND NEW JERSEY
TENANT ALTERATION APPLICATION REVIEW REQUEST**

Revised 11/99

12/14

DISTRIBUTION		
No.	To	Facility
2	QAD	PATC Zip 73
1	D. Warren	PATC Zip 43
1	E.P. Chiao	88 S
1	G. Daly	88 S
1	B. Brown	88 S
1	E. Cordelluz/Nick Strenk - LERA	2 WTC 37 th Fl
1*	R. Simonetti	2 WTC 37 th Fl
1*	CADD Disk Set	37 th Fl
1	F. DeMartini	88 S
1	P. Negron	2 WTC 37 th Fl
1	S. Batra	2 WTC 37 th Fl
1	C. Semah	2 WTC 35 th Fl

Facility 2 WTC Floor 43 FL TAA No. WFM 6441 Date 12/1/99

Application/Tenant MORGANSTANLEY / LEAD WITTER

Consultant DESIGNERS QUAD GROUP

Estimated Cost _____ Submittal No. ONE

Description of Work
NO CONSTRUCTION
ONLY ANALYSIS REVIEW

NO LATER THAN

12/14/99

Due Date

* for each submission

Please review the attached
(revised) application and send
comments to:

Name: Carlo J. Saavedra

Location: 1 WTC, 88S Phone No. 435-2922

Fax No.: 435-8168

OFFICE COPY

DESIGN DISCIPLINES

- ☐ Architectural
- ☐ Egress Analysis
- ☐ Structural
- ☐ HVAC
- ☐ Plumbing
- ☐ Sprinkler
- ☐ Electrical
- ☐ Utility > 600 V
- ☐ Civil
- ☐ Geotechnical
- ☐ Environmental
- ☐ Fueling
- ☐ Radio Freq. Coord.
- ☐ Corrosion Protection
- ☐ Elevator/Escalator
- ☐ Other

ATTACHMENTS

- ☐ Document List
- ☐ Contract Drawings
- ☐ Contract Specifications
- ☐ Tenant Response
- ☐ Computations
- ☐ Reports
- ☐ Catalog Cuts
- ☐ Other

DESCRIPTION

THE PORT AUTHORITY OF N.Y. & N.J.
ENGINEERING & QUALITY ASSURANCE DIV.
DESIGN STANDARDS

DEC - 8 1999

WFM-6441

RECEIVED

ALTERATIONS APPLICATION
CONSTRUCTION REVIEW UNIT

SPECIAL INSTRUCTIONS

**SINGLE DISCIPLINE (ARCH.)
EGRESS ANALYSIS.
AS PER OUR AGREEMENT
LESS THAN 5 DAYS.**

Copy to: R. Benacchio, T. Koebel, J. Napolitano,
L. Menno, E. Monteverde, J. Richardson,
J. Ruiz, N. Seliga, F. Varriano

Signature

(Proj. Mgr.)

(Zone Prop. Mgr.)

JOE NAPOLITANO

10-7285

1
1/27/95**THE PORT AUTHORITY OF NY & NJ**One World Trade Center
New York, N.Y. 10048

January 27, 1995

Engineering Department
Eugene J. Fasullo, P.E.
Director of Engineering &
Chief Engineer(212) 435-7449
(201) 961-6600 x7449

Mr. Richard C. Visconti, R.A.
First Deputy Commissioner
New York City Department of Buildings
60 Hudson Street
New York, New York 10013

Dear Commissioner Visconti:

Thank you for the time you spent with Port Authority (PA) staff on December 6, 1994 to discuss the proposed design plan (the "design plan") for the Windows on the World Restaurant located on the 106th and 107th floors of the World Trade Center. We discussed with you:

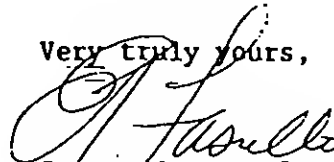
- o The PA's proposal to divide the entire floor, on each of the two Restaurant floors, into three (3) areas of refuge in accordance with Section 27-372 of the Administrative Code that will provide additional vertical exit capacity to the existing stairs in accordance with the exit reduction allowances of Section 27-367 of the Code;
- o Each area of refuge is separated by a two hour fire rated separation;
- o In one (1) area on each of the Restaurant's floors, the capacity of the stair within the area is less than one third of the proposed occupant load of that area.

Following this discussion, you and Mr. Trivisonno, also of the Department of Buildings, stated that the proposed design is acceptable and conforms to the New York City Building Code due to the fact that on each floor each area of refuge has access to its "own" exit stair within the area, to the other two (2) areas of refuge, and additionally to an elevator, and our calculations of the egress facilities demonstrate that the code allowed capacity of all three stairs is sufficient to permit safe egress for the occupant load from each area and from the entire floor. You further indicated that the exit doors should swing properly in the direction of egress.

Attached are reduced versions of the two plans entitled "106th Floor Egress Plan" and "107th Floor Egress Plan" used for this discussion.


If you find the above to be a fair and accurate summary of the meeting, I would appreciate your concurrence.

Very truly yours,

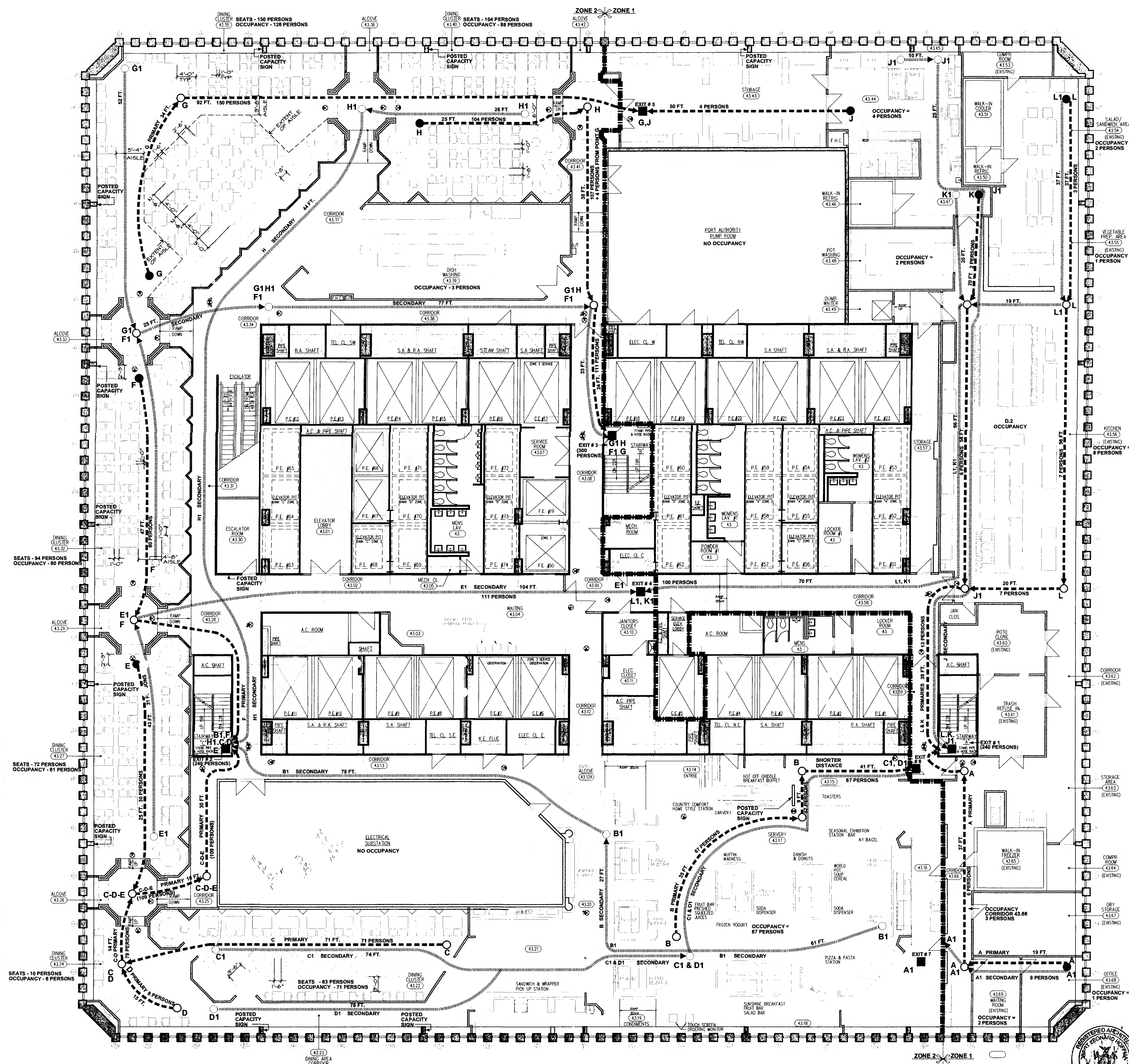


Eugene J. Fasullo, P.E.
Director of Engineering &
Chief Engineer


CONCURRED:




Richard C. Visconti, First Deputy Commissioner
New York City Department of Buildings
Att.




LEGEND




EXIT POINT



PRIMARY STARTING POINT FOR TRAVEL



PRIMARY AND/OR SECONDARY CHANGE OF DIRECTION MODE



SECONDARY STARTING POINT FOR TRAVEL

OCCUPANCY TABULATION

OCCUPANCY LOADS HAVE BEEN DEVELOPED TO REALISTICALLY REFLECT THE ACTUAL MAXIMUM POPULATION AT PEAK PERIODS. THE METHOD IS CALCULATED AS FOLLOWS:

- ① AN ACCEPTED INDUSTRY STANDARD ROOM MAXIMUM EFFICIENCY FACTOR OF 1.0 HAS BEEN APPLIED TO TOTAL SEAT COUNT. THIS REFLECTS THE FACT THAT THERE IS NEVER A 100% RANGE OF SEATS SINCE 2-PERSON TABLES WILL HAVE SINGLE OCCUPANT USE AND 4-PERSON TABLES WILL HAVE 2 OCCUPANT USE.
- ② AN ACCEPTED INDUSTRY STANDARD 50% CIRCULATION FACTOR BASED UPON THE ADJUSTED SEAT COUNT HAS BEEN ADDED TO THE OCCUPANCY LOAD AND ASSIGNED TO THE SEVERITY.
- ③ ACTUAL STAFF COUNTS ARE ASSIGNED TO VARIOUS ROOM LOCATIONS.

ZONE 1

A. SERVICE AREA			
43-49	STAND-IN COUNTER	4	
SUBTOTAL		4	
B. SERVICE AREAS			
45-46	POT WASHING	2	
45-47	WALL PREPARATION	2	
45-59	VEG. PREPARATION	1	
50	ICE	1	
49-66	CORR/STORAGE	5	
67	OFFICE	2	
45-61	HATTING ROOM	2	
SUBTOTAL		18	
TOTAL		22	

ZONE 2

A. DINING AREAS			
43-22	DINING CLUSTER	71	
43-24	DINING CLUSTER	2	
43-22	DINING CLUSTER	6	
43-22	DINING CLUSTER	60	
43-25	DINING CLUSTER	128	
43-40	DINING CLUSTER	40	
SUBTOTAL		406	
B. SERVICE AREAS			
45-17	SERVERS	67	
45-28	DISH WASHING	3	
SUBTOTAL		70	
TOTAL		506	

ZONE 1

MEANS OF EGRESS - EXIT # 1 (STAIR # 1) - 120 PERSONS
AS PER NYC CODE C-204.6.5.2 - ACCESS TO AREA OF RETIRED - EXIT REDUCTION

TOTAL AVAILABLE OCCUPANCY LOAD 240 PERSONS
NOTE: OCCUPANCY LOAD WITHIN CODE GUIDELINES
(SEE OCCUPANCY TABULATIONS FOR ZONE 1)

ZONE 2

MEANS OF EGRESS - EXIT # 2 (STAIR # 2) - 120 PERSONS
MEANS OF EGRESS - EXIT # 3 (STAIR # 3) - 100 PERSONS
AS PER NYC CODE C-204.6.5.2 - ACCESS TO AREA OF RETIRED - EXIT REDUCTION

TOTAL AVAILABLE OCCUPANCY LOAD 540 PERSONS
NOTE: OCCUPANCY LOAD WITHIN CODE GUIDELINES
(SEE OCCUPANCY TABULATIONS FOR ZONE 2)

GENERAL NOTES:

- * ALL SPACES CLASSIFIED UNDER OCCUPANCY GROUP F-4 UNLESS OTHERWISE INDICATED.
- * ALL SEATING AND FORTHELLS DISTANCES HAVE BEEN ADJUSTED TO REFLECT PENALTIES.
- * EACH LES CARRIES CALCULATED AMOUNT OF PERSONS TRAVELING FROM THEIR RESPECTIVE STARTING POINT.
- * NOTE THAT SINCE THIS ASSEMBLY SPACE IS EQUIPPED WITH AUTOMATIC SPRINKLERS, THE PRIMARY AND SECONDARY DISTANCES IS INCREASED BY 50% PRIMARY - 127'1", SECONDARY - 167'1". PER NYC CODE TABLE B-1.

POINT OF EGRESS

EXIT # 1/STAIR # 1

AVAILABLE CAPACITY OF EGRESS	- 240 PERSONS
TOTAL PERSONS TRAVELING TO EXIT # 1	- 14 PERSONS

TOTAL DISTANCE FROM POINT	A	K	L	J
PRIMARY PATH	70	151	168	
SECONDARY PATH			160	

* D-2 OCCUPANCY GROUP PER NYC CODE TABLE B-1
MAXIMUM TRAVEL DISTANCE - 200 FT.

EXIT # 2/STAIR # 2

AVAILABLE CAPACITY OF EGRESS	- 240 PERSONS
TOTAL PERSONS TRAVELING TO EXIT # 2	- 04 PERSONS

TOTAL DISTANCE FROM POINT	C	D	E	B	F	H
PRIMARY PATH	131	75	78	91		
SECONDARY PATH			166	136		

EXIT # 3/STAIR # 3

AVAILABLE CAPACITY OF EGRESS	- 200 PERSONS
TOTAL PERSONS TRAVELING TO EXIT # 3	- 03 PERSONS

TOTAL DISTANCE FROM POINT	H	F	G
PRIMARY PATH	97		
SECONDARY PATH	135	187	

EXIT # 4 AT CORRIDOR 43.09 (ZONE 1; ZONE 2) - AREA OF REFUGE

AVAILABLE CAPACITY OF EGRESS	- 200 PERSONS
TOTAL PERSONS TRAVELING TO EXIT # 4	- 03 PERSONS

TOTAL DISTANCE FROM POINT	K	L	E
PRIMARY PATH			
SECONDARY PATH	162	187	

EXIT # 5 AT ALCOVE 43.42 (ZONE 2; 3; 4; 5; 6; 7; 8; 9; 10; 11; 12; 13; 14; 15; 16; 17; 18; 19; 20; 21; 22; 23; 24; 25; 26; 27; 28; 29; 30; 31; 32; 33; 34; 35; 36; 37

**MORGAN STANLEY
DEAN WITTER**
FACILITIES DEPARTMENT
2 WORLD TRADE CENTER
NEW YORK, N.Y. 10048
56th FLOOR

ISSUED		
NO.	DATE	TO WHOM ISSUED
1	11-12-49	ISSUED TO PANYUJI & MEDOW

DESIGNERS QUAD GROUP, P.C.
▪ 20 WEST 38TH STREET ▪ NEW YORK, NEW YORK 10018 ▪ TEL. (212) 730-6836 ▪



NO.	DATE	DESCRIPTION
REVISIONS		

PROJECT
**MORGAN STANLEY
DEAN WITTER**
2 WORLD TRADE CENTER
NEW YORK, NEW YORK 10048
43RD FLOOR

EGRESS ANALYSIS PLAN

DRAWN BY: M. KHOLCHANSKIY	DATE: 9-30-99
CHECKED BY: J. GRIMA	SCALE: 1/8"=1'-0"
APPROVED BY:	JOB NO.: 9948
NORTH	SHEET NO.:

EA-1